

REMARKS

This application has been reviewed in light of the final Office Action dated May 4, 2006. In view of the foregoing amendments and the following remarks, favorable reconsideration and withdrawal of the rejections set forth in the Office Action are respectfully requested.

Claims 73-75 and 77-85 are pending. Claims 73, 83 and 84 have been amended. Support for the claim changes can be found in the original disclosure, and therefore no new matter has been added. Claims 73, 83 and 84 are in independent form.

Claims 73, 74, 77-81 and 83-85 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Nos. 5,500,988 (*Moynihan et al.*) and 5,719,417 (*Roeder et al.*), and the article entitled "Growth and Characterization of . . . Single Crystal Piezoelectrics" (*Farrey et al.*) (cited in the Notice of References Cited enclosed with the Office Action dated June 24, 2004).

Claim 75 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Moynihan et al.*, *Roeder et al.*, *Farrey et al.* and further in view of European Patent Application Publication No. 0 930 165 (*EP '165*).

Claim 82 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Moynihan et al.*, *Roeder et al.*, *Farrey et al.* and further in view of U.S. Patent No. 5,453,262 (*Dawson et al.*).

Without conceding the propriety of the rejections over the prior art, independent Claims 73, 83 and 84 have been amended. Amended independent Claims 73, 83 and 84 are believed allowable over the cited art for at least the following reasons.

Independent Claim 73 recites, *inter alia*, a step of forming by a vapor method on a supporting substrate a first layer having a perovskite structure, a temperature at a time of deposition of the first layer being at least 500°C during the vapor method, and a step of subsequently cooling from the deposition temperature at least to 450°C with a cooling speed of at least 30°C/minute. Each of independent Claims 83 and 84 includes similar recitations.

None of the cited documents is understood to teach or suggest at least the step of “subsequently cooling from the deposition temperature at least to 450°C with a cooling speed of at least 30°C/minute,” as recited in the claimed combination.

Moynihan et al. teaches successively applying (depositing) a series of PZT layers 3 to an electroded substrate 10 by a sol gel process, then (after firing to drive off organic materials) annealing the deposited PZT layer(s) by heating to 600°C to 800°C, maintaining the annealing temperature for about 10 seconds, and then cooling to room temperature in about 30 seconds. See col. 3, lines 19-39.

Thus, although *Moynihan et al.* teaches cooling from an annealing temperature of 600°C to 800°C to room temperature in about 30 seconds, nothing in *Moynihan et al.* is understood to teach or suggest cooling from a deposition temperature at least to 450°C with a cooling speed of at least 30°C/minute, as recited in the claimed combination.

Roeder et al. teaches depositing a layer of PLT and then a layer of PZT, using a vapor method, the process being carried out at temperatures between 525°-550°C. See, e.g., col. 7, lines 12-36. However, as is understood to be conceded by the Office Action, nothing in *Roeder et al.* would teach or suggest a step of “subsequently cooling from the deposition

temperature at least to 450°C with a cooling speed of at least 30°C/minute,” as recited in the claimed combination.

Since neither *Moynihan et al.* nor *Roeder et al.*, whether taken singly or in combination (even assuming, for the sake of argument, that such combination were permissible), contains all of the elements of any of the independent claims, those claims are believed allowable over the cited art. (While *Farrey et al.* was cited in the rejection of the independent claims, it is noted that that reference was not in fact applied against those claims.)

A review of the other art of record, including *Farrey et al.*, *EP '165* and *Dawson et al.*, has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

Applicants submit that this Amendment After Final Rejection clearly places the subject application in condition for allowance. This Amendment was not presented earlier, because Applicants believed that the prior response placed the subject application in condition for allowance. Accordingly, entry of the instant Amendment, as an earnest attempt to advance prosecution and reduce the number of issues, is requested under 37 C.F.R. § 1.116.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

STATEMENT OF SUBSTANCE OF INTERVIEW

Applicants wish to thank the Examiner for the courtesies extended to Applicants' undersigned representative during the interview conducted on August 2, 2006.

In the interview, Applicants' attorney and the Examiner discussed alternative proposed amendments to the independent claims (Claims 73, 83 and 84) (the proposed amendments are set forth in the Interview Summary). The Examiner indicated that each of the alternative proposed amendments appears to overcome the prior art of record. The Examiner requested that Applicants present any of the alternative proposed amendments formally, for the Examiner's consideration and review.

Applicants' undersigned attorney may be reached in our Washington office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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